

SEQUENCE LISTING

<110> Aptus Genomics, Inc.

YAO, Yong
CAO, Liang

<120> Novel Cell-Based Assays for G-Protein-Coupled Receptor-Mediated Activities

<130> 53735-5004-US

<150> 60/330,663
<151> 2001-10-26

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<170> PatentIn version 3.1

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<211> 1995
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His Asn His His Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp		
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His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr		
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Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly		
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Ileu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln		
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ggg gat gac aaa ggc ggc aag gac ggc gag gga aag ggc acc aaa aag		384
Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys		
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Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys			
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Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala			
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Arg Met Phe Glu Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro			
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Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile			
275	280	285	
cac tgg aat gct tgt att tat tat gtt att tct aag tcc att ggc ttt			912
His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe			
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Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr			
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aac atg gat acc ttg tac act cgc ttt gcc cgc ctg ctg gct gag tac Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr 610	615	620	1872
act ggg gcc cag cag aag ctc aag caa cgc atc aca gtg cta gag acc Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr 625	630	635	1920
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Thr Pro Glu Pro Thr Ala Ala Glu
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1995

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Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly
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Trp Ala Asn Lys Asn Phe Arg Glu Glu Pro Arg Pro Asp Ser Phe
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Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln
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Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys
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Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val
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Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala
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Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile
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His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe
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Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr
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Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr
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Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr
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Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly
50 55 60
agg ggt ggc ttc caa agg att gtt cgc ctg gtg ggg gtc atc agg gac 240
Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp
65 70 75 80
tgg gcc aac aag aat ttc cgt gaa gag gaa cca agg cct gac tcc ttc 288
Trp Ala Asn Lys Asn Phe Arg Glu Glu Pro Arg Pro Asp Ser Phe
85 90 95
cta gag cgt ttc cgt ggg cca gaa ctc cag act gtg aca acc cat cag 336
Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr His Gln
100 105 110
ggg gat gac aaa ggc ggc aag gac ggc gag gga aag ggc acc aaa aag 384
Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys
115 120 125
aaa ttt gaa ctg ttt gtt ttg gac cca gcc gga gac tgg tat tac cgt 432
Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg
130 135 140
tgg ttg ttt gtc att gcc atg cct gtt ctt tac aac tgg tgc ctg ttg 480
Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu
145 150 155 160
gtg gcc aga gcc tgc ttc agt gat cta cag aga aac tat ttt gtg gta 528
Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val
165 170 175
tgg ctg gtg ctg gac tac ttc tca gac act gtc tat atc gca gac ctc 576
Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu
180 185 190
atc att cgg ctg cgc aca ggc ttc cta gaa cag ggg ctc ttg gtc aaa 624
Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys
195 200 205

gat ccc aag aaa ttg cga gac aac tat att cac act ttg cag ttc aaa		672	
Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys			
210	215	220	
ttg gat gtg gct tct atc att ccc act gac ctt atc tat ttt gct gtg		720	
Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val			
225	230	235	240
ggt atc cac agc cct gag gta cgc ttc aac cgt cta tta cac ttt gcc		768	
Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala			
245	250	255	
cgt atg ttt gag ttc ttt gac cgc act gag aca cgc acc agc tac ccc		816	
Arg Met Phe Glu Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro			
260	265	270	
aac atc ttc cga atc agc aat ctg gtc ctt tac atc ttg gtc atc atc		864	
Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile			
275	280	285	
cac tgg aat gct tgt att tat tat gtt att tct aag tcc att ggc ttt		912	
His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe			
290	295	300	
gga gtt gac acc tgg gtt tac ccc aac att act gac cct gaa tat ggc		960	
Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly			
305	310	315	320
tac ctg gct aga gag tac att tac tgt ctt tac tgg tcc aca ctg acc		1008	
Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr			
325	330	335	
ctc acc acc att gga gag aca cca ccc cct gta aag gat gag gag tac		1056	
Leu Thr Ile Gly Glu Thr Pro Pro Val Lys Asp Glu Glu Tyr			
340	345	350	
cta ttt gtc atc ttt gac ttc ttg att ggt gtc ctc atc ttt gcc act		1104	
Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr			
355	360	365	
att gtg gga aat gtg ggc tcc atg atc tcc aac atg aat gcc aca cga		1152	
Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg			
370	375	380	
gca gag ttc cag gcc aag att gat gct gtc aaa cac tac atg cag ttc		1200	
Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe			
385	390	395	400
cga aag gtc agc aaa gac atg gaa gcc aag gtc atc aaa tgg ttt gac		1248	
Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp			
405	410	415	
tac ttg tgg acc aat aag aag aca gta gat gaa cga gaa gtc ctc aag		1296	
Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys			
420	425	430	
aac ctg cca gca aag ctc agg gct gag ata gcc att aat gtt cac ttg		1344	
Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu			
435	440	445	

tcc act ctg aag aaa gtg cgc ata ttc cag gat tgg gaa gct ggc cta 1392
 Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu
 450 455 460

ctg gtg gaa ctg gta ctg aag ctt cgt cct cag gtc ttt agt cct gga 1440
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly
 465 470 475 480

gat tat att tgc cgt aag ggg gac att ggc aag gaa atg tac atc atc 1488
 Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile
 485 490 495

aag gag ggc aag ttg gca gtg gta gct gat gat ggc gtg act cag tat 1536
 Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr
 500 505 510

gcc ttg ctc tca gct ggg agc tgc ttt ggt gag att agt atc ctt aac 1584
 Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn
 515 520 525

att aag ggt agc aaa atg ggc aat cga cgt act gct aat atc cgt agc 1632
 Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser
 530 535 540

ctg ggc tac tca gat ctc ttc tgc ttg tcc aag gac gat ctt atg gaa 1680
 Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu
 545 550 555 560

gct gta act gag tat cct gat gcc aag aag gtc ctg gag gaa cgg ggt 1728
 Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly
 565 570 575

agg gag atc ctg atg aag atg ggt cta ctg gat gag aat gaa gtg gca 1776
 Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala
 580 585 590

gct agt atg gag gta gat gtt cag gag aag ctg gaa cag ttg gag aca 1824
 Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr
 595 600 605

aac atg gat acc ttg tac act cgc ttt gcc cgc ctg ctg gct gag tac 1872
 Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr
 610 615 620

act ggg gcc cag cag aag ctc aag caa cgc atc aca gtg cta gag acc 1920
 Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr
 625 630 635 640

aag atg aaa cag aac cat gag gat gat tat cta tca gat ggg ata aac 1968
 Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn
 645 650 655

act cct gag cca act gct gct gaa taa 1995
 Thr Pro Glu Pro Thr Ala Ala Glu
 660

<210> 6
 <211> 664
 <212> PRT
 <213> Rattus norvegicus

<400> 6

Met Met Thr Glu Lys Ser Asn Gly Val Lys Ser Ser Pro Ala Asn Asn
1 5 10 15

His Asn His His Pro Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp
20 25 30

His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr
35 40 45

Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly
50 55 60

Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp
65 70 75 80

Trp Ala Asn Lys Asn Phe Arg Glu Glu Pro Arg Pro Asp Ser Phe
85 90 95

Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln
100 105 110

Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys
115 120 125

Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg
130 135 140

Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu
145 150 155 160

Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val
165 170 175

Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu
180 185 190

Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys
195 200 205

Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys
210 215 220

Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val
225 230 235 240

Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala
245 250 255

Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro
260 265 270

Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile
275 280 285

His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe
290 295 300

Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly
305 310 315 320

Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr
325 330 335

Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr
340 345 350

Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr
355 360 365

Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg
370 375 380

Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe
385 390 395 400

Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp
405 410 415

Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys
420 425 430

Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu
435 440 445

Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu
450 455 460

Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly
465 470 475 480

Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile
485 490 495

Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr
500 505 510

Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn
515 520 525

Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser
530 535 540

Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu
545 550 555 560

Ala Val Thr Glu Tyr Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly
565 570 575

Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala
580 585 590

Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr
595 600 605

Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr
610 615 620

Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr
625 630 635 640

Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn
645 650 655

Thr Pro Glu Pro Thr Ala Ala Glu
660

<210> 7
<211> 1995
<212> DNA
<213> Rattus norvegicus

<220>
<221> CDS
<222> (1) .. (1992)
<223>

<400> 7

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cat aac cat cat cct cct cct tct atc aag gcc aat ggc aaa gat gac His Asn His His Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp 20 25 30	96
cac agg gca gga agc aga cca cag tct gtg gca gct gat gat gac act His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr 35 40 45	144
tct cca gaa cta caa agg ctg gca gag atg gat acc cct cgg agg ggg Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly 50 55 60	192
agg ggt ggc ttc caa agg att gtt cgc ctg gtg ggg gtc atc agg gac Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp 65 70 75 80	240
tgg gcc aac aag aat ttc cgt gaa gag gaa cca agg cct gac tcc ttc Trp Ala Asn Lys Asn Phe Arg Glu Glu Pro Arg Pro Asp Ser Phe 85 90 95	288
cta gag cgt ttc cgt ggg cca gaa ctc cag act gtg aca acc cat cag Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln 100 105 110	336
ggg gat gac aaa ggc ggc aag gac ggc gag gga aag ggc acc aaa aag Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys 115 120 125	384
aaa ttt gaa ctg ttt gtt ttg gac cca gcc gga gac tgg tat tac cgt Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg 130 135 140	432
tgg ttg ttt gtc att gcc atg cct gtt ctt tac aac tgg tgc ctg ttg Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu 145 150 155 160	480
gtg gcc aga gcc tgc ttc agt gat cta cag aga aac tat ttt gtg gta Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val 165 170 175	528
tgg ctg gtg ctg gac tac ttc tca gac act gtc tat atc gca gac ctc Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu 180 185 190	576
atc att cgg ctg cgc aca ggc ttc cta gaa cag ggg ctc ttg gtc aaa Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys 195 200 205	624
gat ccc aag aaa ttg cga gac aac tat att cac act ttg cag ttc aaa Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys 210 215 220	672
ttg gat gtg gct tct atc att ccc act gac ctt atc tat ttt gct gtg Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val 225 230 235 240	720
ggt atc cac agc cct gag gta cgc ttc aac cgt cta tta cac ttt gcc	768

Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala
 245 250 255
 cgt atg ttt gag ttc ttt gac cgc act gag aca cgc acc agc tac ccc 816
 Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro
 260 265 270
 aac atc ttc cga atc agc aat ctg gtc ctt tac atc ttg gtc atc atc 864
 Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile
 275 280 285
 cac tgg aat gct tgt att tat tat gtt att tct aag tcc att ggc ttt 912
 His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe
 290 295 300
 gga gtt gac acc tgg gtt tac ccc aac att act gac cct gaa tat ggc 960
 Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly
 305 310 315 320
 tac ctg gct aga gag tac att tac tgt ctt tac tgg tcc aca ctg acc 1008
 Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr
 325 330 335
 ctc acc acc att gga gag aca cca ccc cct gta aag gat gag gag tac 1056
 Leu Thr Thr Ile Gly Glu Thr Pro Pro Val Lys Asp Glu Glu Tyr
 340 345 350
 cta ttt gtc atc ttt gac ttc ttg att ggt gtc ctc atc ttt gcc act 1104
 Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr
 355 360 365
 att gtg gga aat gtg ggc tcc atg atc tcc aac atg aat gcc aca cga 1152
 Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg
 370 375 380
 gca gag ttc cag gcc aag att gat gct gtc aaa cac tac atg cag ttc 1200
 Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe
 385 390 395 400
 cga aag gtc agc aaa gac atg gaa gcc aag gtc atc aaa tgg ttt gac 1248
 Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp
 405 410 415
 tac ttg tgg acc aat aag aag aca gta gat gaa cga gaa gtc ctc aag 1296
 Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys
 420 425 430
 aac ctg cca gca aag ctc agg gct gag ata gcc att aat gtt cac ttg 1344
 Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu
 435 440 445
 tcc act ctg aag aaa gtg cgc ata ttc cag gat tgg gaa gct ggc cta 1392
 Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu
 450 455 460
 ctg gtg gaa ctg gta ctg aag ctt cgt cct cag gtc ttt agt cct gga 1440
 Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly
 465 470 475 480
 gat tat att tgc cgt aag ggg gac att ggc aag gaa atg tac atc atc 1488
 Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile

485	490	495	
aag gag ggc aag ttg gca gtg gta gct gat gat ggc gtg act cag tat Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr 500	505	510	1536
gcc ttg ctc tca gct ggg agc tgc ttt ggt gag att agt atc ctt aac Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn 515	520	525	1584
att aag ggt agc aaa atg ggc aat cga cgt act gct aat atc cgt agc Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser 530	535	540	1632
ctg ggc tac tca gat ctc ttc tgc ttg tcc aag gac gat ctt atg gaa Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu 545	550	555	1680
gct gta act gag gct cct gat gcc aag aag gtc ctg gag gaa cgg ggt Ala Val Thr Glu Ala Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly 565	570	575	1728
agg gag atc ctg atg aag atg ggt cta ctg gat gag aat gaa gtg gca Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala 580	585	590	1776
gct agt atg gag gta gat gtt cag gag aag ctg gaa cag ttg gag aca Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr 595	600	605	1824
aac atg gat acc ttg tac act cgc ttt gcc cgc ctg ctg gct gag tac Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr 610	615	620	1872
act ggg gcc cag cag aag ctc aag caa cgc atc aca gtg cta gag acc Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr 625	630	635	1920
aag atg aaa cag aac cat gag gat gat tat cta tca gat ggg ata aac Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn 645	650	655	1968
act cct gag cca act gct gct gaa taa Thr Pro Glu Pro Thr Ala Ala Glu 660			1995

<210> 8
 <211> 664
 <212> PRT
 <213> Rattus norvegicus

<400> 8

Met Met Thr Glu Lys Ser Asn Gly Val Lys Ser Ser Pro Ala Asn Asn
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His Asn His His Pro Pro Ser Ile Lys Ala Asn Gly Lys Asp Asp
20 25 30

His Arg Ala Gly Ser Arg Pro Gln Ser Val Ala Ala Asp Asp Asp Thr
35 40 45

Ser Pro Glu Leu Gln Arg Leu Ala Glu Met Asp Thr Pro Arg Arg Gly
50 55 60

Arg Gly Gly Phe Gln Arg Ile Val Arg Leu Val Gly Val Ile Arg Asp
65 70 75 80

Trp Ala Asn Lys Asn Phe Arg Glu Glu Glu Pro Arg Pro Asp Ser Phe
85 90 95

Leu Glu Arg Phe Arg Gly Pro Glu Leu Gln Thr Val Thr Thr His Gln
100 105 110

Gly Asp Asp Lys Gly Gly Lys Asp Gly Glu Gly Lys Gly Thr Lys Lys
115 120 125

Lys Phe Glu Leu Phe Val Leu Asp Pro Ala Gly Asp Trp Tyr Tyr Arg
130 135 140

Trp Leu Phe Val Ile Ala Met Pro Val Leu Tyr Asn Trp Cys Leu Leu
145 150 155 160

Val Ala Arg Ala Cys Phe Ser Asp Leu Gln Arg Asn Tyr Phe Val Val
165 170 175

Trp Leu Val Leu Asp Tyr Phe Ser Asp Thr Val Tyr Ile Ala Asp Leu
180 185 190

Ile Ile Arg Leu Arg Thr Gly Phe Leu Glu Gln Gly Leu Leu Val Lys
195 200 205

Asp Pro Lys Lys Leu Arg Asp Asn Tyr Ile His Thr Leu Gln Phe Lys
210 215 220

Leu Asp Val Ala Ser Ile Ile Pro Thr Asp Leu Ile Tyr Phe Ala Val
225 230 235 240

Gly Ile His Ser Pro Glu Val Arg Phe Asn Arg Leu Leu His Phe Ala
245 250 255

Arg Met Phe Glu Phe Phe Asp Arg Thr Glu Thr Arg Thr Ser Tyr Pro
260 265 270

Asn Ile Phe Arg Ile Ser Asn Leu Val Leu Tyr Ile Leu Val Ile Ile
275 280 285

His Trp Asn Ala Cys Ile Tyr Tyr Val Ile Ser Lys Ser Ile Gly Phe
290 295 300

Gly Val Asp Thr Trp Val Tyr Pro Asn Ile Thr Asp Pro Glu Tyr Gly
305 310 315 320

Tyr Leu Ala Arg Glu Tyr Ile Tyr Cys Leu Tyr Trp Ser Thr Leu Thr
325 330 335

Leu Thr Thr Ile Gly Glu Thr Pro Pro Pro Val Lys Asp Glu Glu Tyr
340 345 350

Leu Phe Val Ile Phe Asp Phe Leu Ile Gly Val Leu Ile Phe Ala Thr
355 360 365

Ile Val Gly Asn Val Gly Ser Met Ile Ser Asn Met Asn Ala Thr Arg
370 375 380

Ala Glu Phe Gln Ala Lys Ile Asp Ala Val Lys His Tyr Met Gln Phe
385 390 395 400

Arg Lys Val Ser Lys Asp Met Glu Ala Lys Val Ile Lys Trp Phe Asp
405 410 415

Tyr Leu Trp Thr Asn Lys Lys Thr Val Asp Glu Arg Glu Val Leu Lys
420 425 430

Asn Leu Pro Ala Lys Leu Arg Ala Glu Ile Ala Ile Asn Val His Leu
435 440 445

Ser Thr Leu Lys Lys Val Arg Ile Phe Gln Asp Trp Glu Ala Gly Leu
450 455 460

Leu Val Glu Leu Val Leu Lys Leu Arg Pro Gln Val Phe Ser Pro Gly
465 470 475 480

Asp Tyr Ile Cys Arg Lys Gly Asp Ile Gly Lys Glu Met Tyr Ile Ile
485 490 495

Lys Glu Gly Lys Leu Ala Val Val Ala Asp Asp Gly Val Thr Gln Tyr
500 505 510

Ala Leu Leu Ser Ala Gly Ser Cys Phe Gly Glu Ile Ser Ile Leu Asn

515

520

525

Ile Lys Gly Ser Lys Met Gly Asn Arg Arg Thr Ala Asn Ile Arg Ser
530 535 540

Leu Gly Tyr Ser Asp Leu Phe Cys Leu Ser Lys Asp Asp Leu Met Glu
545 550 555 560

Ala Val Thr Glu Ala Pro Asp Ala Lys Lys Val Leu Glu Glu Arg Gly
565 570 575

Arg Glu Ile Leu Met Lys Met Gly Leu Leu Asp Glu Asn Glu Val Ala
580 585 590

Ala Ser Met Glu Val Asp Val Gln Glu Lys Leu Glu Gln Leu Glu Thr
595 600 605

Asn Met Asp Thr Leu Tyr Thr Arg Phe Ala Arg Leu Leu Ala Glu Tyr
610 615 620

Thr Gly Ala Gln Gln Lys Leu Lys Gln Arg Ile Thr Val Leu Glu Thr
625 630 635 640

Lys Met Lys Gln Asn His Glu Asp Asp Tyr Leu Ser Asp Gly Ile Asn
645 650 655

Thr Pro Glu Pro Thr Ala Ala Glu
660